12-18-2007

Results of the 2007 Indiana EMS workforce and training assessment

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Results of the
2007 Indiana EMS Workforce and Training Assessment

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Discovery Park

PURDUE
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Background

- **Project conducted under contract for the Office of Rural Health, Indiana State Department of Health from December 2006-August 2007 (part of requirements for HRSA Rural Health Flex Grant)**
- **Mail Surveys sent to all EMS organizations, 2516 EMS personnel from lists obtained via the web from IDHS**
- **Survey conducted February 2007-June 2007**
- **Four contacts: Prenotification letter, First Survey, Reminder, Second Survey**
- **Response rates of 44.7% (individuals), 45.3% (organizations)**
- **Representative geographic distribution of responses**

Questionaires

Survey items taken from published materials used by :

- Nebraska Center for Rural Health Research
- North Dakota State Office of Rural Health
- Arizona Rural Health Office
- Idaho Office of Rural Health and Primary Care

Major Findings

- High vacancy rates in EMS organizations, particularly volunteers
- Paid EMS personnel workloads may be a cause for concern
- Differences in training may indicate disparities in quality of cardiac care between urban and rural areas
- A variety of training needs are identified, many in non-clinical areas
- EMS Training environment is extremely varied
- A significant proportion of EMS organizations and personnel do not appear to be conducting audits as required by recertification requirements
- EMS personnel prefer hands on training in the abstract, but when given specific scenarios prefer local classroom courses or computer training
- Self Assessment of preparedness reveals that the EMS system in rural areas is likely less capable than that in urban areas

Vacancy Rates

In general, 20% or more positions are unfilled

% Urban	EMT-Basic			EMT-Basic/Advanced			EMT-Intermediate			EMT-Paramedic		
	Positions	Vacancies	Rate	Positions	Vacancies	Rate	Positions	Vacancies	Rate	Positions	Vacancies	Rate
0-25	6.4	1.9	29%	3.58	1.07	30%	0.8	0.2	30%	3.7	0.5	14%
26-50	7.9	2.2	28%	2.49	0.5	20%	0.4	0.1	17%	3.0	1.0	32%
50-75	11.0	2.2	20%	1.49	0.16	11%	0.0	0.1	200%	5.6	1.1	19%
75-100	28.8	2.6	9%	1.57	0.18	11%	0.6	0.1	25%	10.6	1.8	17%

Hiring Difficulty

		% of Population in Urban Area								Statistics	
		0-25%		25-50%		50-75%		>75%		Chi-square	sig
		%	N	%	N	%	N	%	N		
Use only volunteers		55.6	20	52.3	46	46.4	26	31.8	42	12.408	0.006
Hiring Difficulty	Very Difficult	44.1	15	44.3	39	30.2	16	26.2	33	12.515	0.186
	Difficult	47.1	16	47.7	42	60.4	32	65.9	83		
	Easy	8.8	3	4.5	4	7.5	4	6.3	8		
	Very Easy	0.0	0	3.4	3	1.9	1	1.6	2		

Workloads

					Years		
Employment		**Hours/week**	**Runs/week**	**Certified**	**EMS work**	**Current org**	**Age**
Volunteer							
	N	107	111	130	131	123	131
	Mean	13.2	3.5	10.9	11.3	9.8	41.5
	SD	14.9	3.5	7.1	7.9	8.0	12.9
Part-time							
	N	145	143	152	152	153	153
	Mean	22.9	6.0	12.5	12.5	8.9	41.2
	SD	14.3	5.6	8.1	8.1	7.4	10.4
Full-time							
	N	652	643	654	647	655	658
	Mean	54.4	15.3	14.3	14.3	10.3	39.0
	SD	14.8	11.8	8.4	9.4	8.1	9.5
Statistics							
	F	547.66	92.44	10.80	7.90	2.05	5.53
	sig	<0.001	<0.001	<0.001	<0.001	0.129	0.004

Outside Employment

	%Urban									
	0-25		25-50		50-75		75-100		Statistics	
	N	%	N	%	N	%	N	%	Chi-Square	sig
Other Job										
None	25	25.8	83	30.6	47	35.1	185	37.4	6.966	0.073
Part-time	27	27.8	84	31	44	32.8	197	40.0	9.742	0.021
Full-time	46	47.4	104	38.4	43	32.1	111	22.5	35.988	<0.001
Healthcare?	30	41.1	67	35.4	29	34.1	142	46.3	7.576	0.056

Funding

		% Population in Urban Areas								Statistics	
		0-25		25-50		50-75		75-100			
		N	%	N	%	N	%	N	%	Chi-square	sig
Funding Sources											
Insurance Reimbursement		17	47.2	39	42.4	28	50.0	77	58.4	5.796	0.122
Member Subscriptions		1	2.8	6	6.5	3	5.4	7	5.3	0.716	0.869
Government Appropriations		32	88.9	75	81.5	46	82.1	98	74.3	4.644	0.200
Grants		15	41.7	35	38.0	16	28.6	28	21.3	10.116	0.017
Fundraising Drives		16	44.4	42	45.7	20	35.7	33	25.0	11.793	0.008
Corporate - Occ. Safety		1	2.8	1	1.1	2	3.6	6	4.5	2.165	0.539

Question

Is the funding level for EMS responsible for workforce issues?

- **Rural EMS Agencies are more likely to face workforce shortages and rely on volunteers**
- **Rural Agencies are more likely to rely on grants and fundraising for operating funds**
- **Rural Agencies are less likely to have appropriated budgets or seek insurance payments**

ISDH Office of Rural Health began training sessions on budgeting for rural EMS agencies in 2007

Training Needs Organizational Perception

	% of Population in Urban Areas								Statistics	
	0-25		25-50		50-75		>75			
	N	%	N	%	N	%	N	%	Chi-square	sig
Training Needs										
Basic Trauma Life Support	22	59.5	57	62	30	55.6	66	49.6	3.643	0.303
Advanced Trauma Life Support	6	16.2	20	21.7	6	11.1	41	30.8	9.922	0.019
Advanced Cardiac Life Support	5	13.5	16	17.4	3	5.6	40	30.1	16.674	0.001
Advanced Pediatric Life Supp.	9	24.3	18	19.6	6	11.1	50	37.6	17.421	0.001
Auto Defibrillation	14	37.8	30	32.6	16	29.6	27	20.3	6.763	0.080
Manual Defibrillation	1	2.7	10	10.9	3	5.6	16	12.0	4.159	0.245
IV Maintenance	3	8.1	10	11.0	3	5.6	14	10.5	1.455	0.693
Epinephrine Administration	2	5.4	13	14.3	3	5.6	11	8.3	4.449	0.217
Flight Medical Crew	2	5.4	3	3.3	0	0.0	4	3.0	2.528	0.470
Automobile Extrication	16	43.2	48	52.2	27	50.0	43	32.3	10.408	0.015
Hazardous materials	17	45.9	47	51.1	25	46.3	53	39.8	2.853	0.415
Bioterrorism response	14	37.8	30	32.6	25	46.3	47	35.3	2.930	0.403
Airway Maintenance	20	54.1	36	39.1	17	31.5	48	36.1	5.251	0.154
Infection Control	11	29.7	27	29.3	12	22.2	24	18.0	4.810	0.186
Foreign Language Skills	19	51.4	35	38.0	23	42.6	57	42.9	1.941	0.585
Triage Methods	15	40.5	44	47.8	28	51.9	58	43.6	1.617	0.656
Personal Protective Equipment	10	27.0	23	25.0	13	24.1	30	22.6	0.387	0.943
Scene Safety	19	51.4	28	30.4	17	31.5	34	25.6	9.019	0.029
Incident Management	20	54.1	46	50.0	20	37.0	51	38.3	5.615	0.132
Emergency Communications	14	37.8	27	29.3	20	37.0	33	24.8	4.089	0.252

Training Received

	Percentage of Population in Urban Areas									
	0-25%		25-50%		50-75%		75-100%		Statistics	
	N	%	N	%	N	%	N	%	Chi-Square	sig
Training Received										
Basic Trauma Life Support	82	85.4	238	88.1	115	85.8	465	93.8	13.925	0.003
Advanced Trauma Life Support	48	51.6	126	47.9	63	47.4	271	55.8	5.664	0.129
Advanced Cardiac Life Support	56	58.3	167	62.3	83	62.4	345	70.3	8.736	0.033
Advanced Pediatric Life Support	51	55.4	150	56.2	77	59.2	320	65	7.349	0.062
Automatic Defibrillation	97	100.0	268	98.9	132	98.5	494	99.2	1.591	0.661
Manual Defibrillation	83	85.6	219	81.4	102	77.3	423	86.2	7.404	0.060
IV Maintenance	90	92.8	251	93.0	125	94.0	458	82.5	0.343	0.952
Epinephrine Administration	75	78.9	195	72.0	100	75.2	415	84.3	17.864	<0.001
Flight Medical Crew	20	21.3	58	22.2	39	29.8	116	23.9	3.229	0.358
Automobile Extrication	85	87.6	237	87.8	120	89.6	468	94.4	12.172	0.007
Hazardous Materials	90	93.8	248	92.2	124	92.5	454	91.3	0.749	0.862
Bioterrorism Response	57	61.3	169	63.5	91	68.4	358	72.8	9.439	0.024
Airway Maintenance	96	99.0	266	98.5	128	96.2	487	98.0	2.927	0.403
Infection Control	96	99.0	258	95.6	125	93.3	479	97.0	6.36	0.095
Foreign Language Skills	15	16.0	23	8.6	14	10.7	85	17.5	12.803	0.005
Triage Methods	93	95.9	258	95.2	130	97.7	487	98.2	6.232	0.101
Personal Protective Equipment	97	100.0	268	89.9	134	100.0	497	99.8	4.824	0.185
Scene Safety	96	99.0	270	99.6	134	100.0	497	99.8	2.343	0.504
Emergency Communications	90	92.8	259	95.6	128	95.5	489	98.4	10.765	0.013
Incident Management	90	92.8	246	90.8	129	96.3	476	95.6	8.806	0.032

Rural Cardiac Care

Higher level of need in rural organizations for training in skills related to cardiac care

- Advanced life support
- Airway maintenance
- Defibrillation
- Epinephrine administration

Audits

- 42.7% of paid, 18% of volunteer organizations report using chart reviews and other audits
- Similar percentages of personnel report their use
- Conclusion: Less than half of EMTs, organizations meet audit requirements

Current Work

- Evaluate the quality of rural EMS care relative to urban services
- Begin with AMI
- Currently having problems with access to the IDHS EMS dataset

ISDH ORH Actions

- Formed Rural Emergency Medical Services Task Force in 2007
- Additional EMS Training Projects from HRSA Rural Health Flex Grant
- Hindered by resignation of Elizabeth Morgan in November 2007

Acknowledgement

Research Team

Kelly Manicke, RN

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Deb Koester, MSN

Anne Fogler, BS